

APRIL/MAY 2024

FCS21 — C++ AND DATA STRUCTURE

Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What are the derived data types available in C++?
2. Define Token in C++.
3. List the operators can't overloaded in C++.
4. What are the two kinds of exceptions?
5. What are the basic operations performed on an abstract data type?
6. Define Queue.
7. What are the two types of recursion?
8. What is a binary tree?
9. What is bubble sort?
10. What is called folding in hash functions?

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Discuss the basic concepts of object oriented programming.

Or

- (b) Explain the looping structures used in C++.

12. (a) Explain the concepts of inheritance with an example.

Or

- (b) Write a C++ program to read N numbers and sort the numbers in descending order using pointers.

13. (a) Describe the operational specifications for the stack ADT.

Or

- (b) Implement the queue operations using linked representation.

14. (a) Demonstrate the factorial function based on three-question method.

Or

- (b) Develop the algorithms for the operations of a binary search tree.

15. (a) Devise an algorithm for construction of a heap.

Or

- (b) Describe the linear probing method for solving collision problem.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Define constructor. Explain the various types of constructors.

17. Describe the functions and manipulators used for formatting output.

18. Explain doubly linked list with its operations.

19. Explain the program templates for BFS and DFS.

20. Explain the merge sort procedures with an example.